TRAFFIC ASSESSMENT

For

Data Center at Bell Works
Holmdel
Monmouth County, New Jersey

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EXECUTIVE SUMMARY

Langan Engineering and Environmental Services LLC has been retained by GEK TERNA Group to prepare a traffic assessment for the proposed development of a 108,00 square foot data center building with 34 parking spaces in Bell Works, Holmdel, Monmouth County, NJ

The development site is located within the Alcatel-Lucent Redevelopment Area. The site is generally bound by the Swing Loose outdoor golf range to the east, Bell Works to the north, open space to the south, and a single-family residential community to the west. The site is currently developed with campus maintenance buildings and support facilities. Access to the site will be secured with a gatehouse and is from Bell Laboratories Road.

In general, data centers are facilities that are staffed 24/7 typically with three shifts that generally begin and end off- peak to the roadway system peak. Data Centers are comprised of large areas containing servers and network storage systems (data halls) and an operations center where the systems are monitored by on-site staff and maintenance personnel. Staffing is generally low compared to the building size and consists of approximately 20 employees per day with 14 employees maximum on any shift inclusive of daily employees and vendors. Deliveries are generally light and consist of typical daily deliveries by mail, parcel post, Fed-Ex, customary to the operation of a commercial business. Langan has estimated the number of trips the proposed data center will generate based on data compiled for Land Use Code 160 (Data Center) by the Institute of Transportation Engineers (ITE) as contained in the publication Trip Generation, 12th edition. Accordingly, Langan estimated that the Data Center will generate approximately 15 new trips 11 enter, 4 exit) during the weekday morning peak hour, 5 new trips (1 enter, 4 exit) during the weekday evening peak hour, and 126 new trips (63 enter, 63 exit) during a typical day.

Access to the data center will be provided via a security gate controlled driveway on Bell Laboratory Drive. Access to the regional roadway system will be provided via the existing circulation and access system for Bell Works. The proposed data center will have a very low peak hour and daily traffic generation that will be accommodated by the access drive. The project will not have a noticeable impact on the adjacent roadway system and will be accommodated by the existing access system serving Bell Works.

INTRODUCTION

Langan Engineering and Environmental Services has been retained by GEK TERNA Group to prepare a traffic assessment for the proposed development of an approximate 108,000 square foot (sf) data center. The project site includes Block No. 11, Lot 38.07 and a portion of 38.05 located in Holmdel, Monmouth County, New Jersey.

Project Description

It is proposed to develop a 2-story, 108,000 square foot data center building supported by 34 parking spaces. The building is comprised of the data center which includes data halls supported by administrative space.

The development site is located within the Alcatel-Lucent Redevelopment Area. The site is generally bound by the Swing Loose outdoor golf range to the east, Bell Works to the north, open space to the south, and a single-family residential community to the west. The site is currently developed with campus maintenance buildings and support facilities. Access to the site will be secured with a gatehouse and is from Bell Laboratories Road.

The development is located within Bell Works. Bell Works is a mixed use development located within the former bell Labs Holmdel Complex, offering a mix of office, retail, entertainment, residential and wellness and community space. Access to Bell works is provided from Roberts Road, Crawfords Corner Road, and Middletown Road which are all linked internally by a two-way circulatory roadway known as Bell Laboratories Road. Bell Laboratories Road provides access to the various surface parking fields, service access areas and development areas located along its length.

Scope of Study

Langan undertook the following steps to prepare this study in accordance with standard traffic engineering methodologies:

1. Conducted a field examination of the development property and surrounding road network to inventory physical and regulatory conditions including the number of lanes, lane assignments, channelization, traffic-control devices, lateral clearances and other factors that limit traffic capacity.
2. Prepared trip generation estimates for the proposed data center based on data documented by the Institute of Transportation Engineers (ITE).
3. Evaluated the access and circulation to and from the adjacent roadways
4. Based upon the projected level of traffic, existing established access and a review of the adjoining roadway system, evaluated the potential impact of the project on peak hour traffic flow.
5. Evaluated the proposed parking supply.

DESCRIPTION OF EXISTING CONDITIONS

This section describes the roads, intersection, and traffic volumes in the area of Bell Works located in Holmdel, Monmouth County, New Jersey.

Roads

Red Hill Road (CR 52)

Red Hill Road is classified as an urban minor arterial and is under Monmouth County jurisdiction. Red Hill Road is designated as County Road 52 and has a general north-south directional orientation. In the vicinity of the site, the posted speed limit is 40mph. In general the roadway provides one lane in each direction in the immediate area of the site.

Middletown Road

Middletown Road is classified as an urban local and is under municipal (Holmdel Township) jurisdiction. The roadway has a general north-south directional orientation and has a posted speed limit ranging from 35mph to 40mph within the site vicinity. In the immediate area around the site the roadway provides two lanes in the northbound direction and one lane in the southbound direction.

Crawfords Corner Road

Crawfords Corner Road is classified as an urban collector and is under municipal (Holmdel Township) jurisdiction. The roadway has a general east-west directional orientation and has a posted speed limit of 40mph within the site vicinity. The roadway provides one lane in each direction in the immediate area around the site.

Holmdel Road (CR 4 II)

Holmdel Road is classified as an urban minor arterial and is under Monmouth County jurisdiction. The roadway has a general north-south directional orientation and has a posted speed limit of 50mph within the site vicinity. The roadway provides one lane in each direction.

Roberts Road

Roberts Road is classified as an urban collector and is under municipal (Holmdel Township) jurisdiction. The roadway has a general north-south direction orientation in the site vicinity with the exception to where it intersects Holmdel Road where it takes on an east-west directional orientation. The roadway provides one lane in each direction and has a posted speed limit of 40mph within the immediate site area.

Intersections

Garden State Parkway Northbound and Red Hill Road

The GSP Northbound off/on-ramps intersect Red Hill Road from the east to form a signalized four-leg intersection. The northbound Red Hill Road approach provides a left-turn lane, two thru

lanes and a right-turn lane. The southbound Red Hill Road approach provides a left-turn lane, one exclusive thru lane and a shared thru/right-turn lane. The eastbound private driveway approach provides a shared left-/thru/right-turn lane. The westbound GSP Northbound ramp provides an exclusive left-turn lane, a shared left-turn/thru lane and a right-turn lane. The intersection runs on a 95 second background cycle length for both the weekday morning and evening peak hour as related to this project and runs on four phases. Phases 1(leading lefts) and 2 and specified for the Red Hill Road approaches. The GSP Northbound ramps and the private driveway run in separate phase 3 and 4 respectively.

Garden State Parkway Southbound and Red Hill Road

The GSP Southbound off/on-ramps intersect Red Hill Road from the west to form a signalized four-leg intersection. The northbound Red Hill Road approach provides two thru lanes and a shared thru/right-turn lane. The southbound Red Hill Road approach provides two thru lanes and a channelized right-turn, which services a jughandle to be utilized by motorists trying to access the MSKCC driveway. The eastbound GSP Southbound off-ramp provides two exclusive left-turn lanes, a thru lane and a right-turn lane. The westbound Memorial Sloan Kettering Cancer Center (MSKCC) driveway provides separate left and right turn lanes. The intersection runs on 90 second background cycle lengths during the weekday morning and evening peak hours and runs three phases with the GSP Southbound ramp and 480 Red Hill Road driveway running in separate phases.

Crawfords Corner Road/Everett Drive and Middletown Road/Red Hill Road

Crawfords Corner Road intersects Middletown Road to form a signalized four-leg intersection. The northbound Middletown Road approach provides a left-turn lane, two thru lanes, and a channelized right-turn lane. The southbound Red Hill Road approach provides a left-turn lane, and thru lane and a channelized right-turn lane. The eastbound Crawfords Corner Road approach provides a left-turn lane, a thru lane, and a channelized right-turn lane. The westbound Everett Drive approach provides a left-turn lane and a shared thru/right-turn lane. The intersection is fully actuated.

Middletown Road and American Way/Bell Laboratories Road

Middletown Road and American Way/Bell Laboratories Road intersect to form a signalized four-leg intersection. The northbound Middletown Road approach provides a shared left-turn/thru lane and a shared thru/right-turn lane. The southbound Middletown Road approach provides a shared left-turn/thru lane and a channelized right-turn lane. The eastbound Bell Laboratories Road approach provides a left-turn lane, a thru lane and a channelized right-turn lane. The westbound American Way approach provides a left-turn lane and a shared thru/right-turn lane.

Roberts Road and Holmdel Road

Roberts Road and Holmdel Road intersect to form a signalized four-leg intersection. The northbound Holmdel Road approach provides a shared left-turn/thru lane and a channelized right-turn lane. The southbound Holmdel Road approach provides a shared left-turn/thru lane and a

channelized right-turn lane. The eastbound Roberts Road approach provides a shared left-turn/thru lane and a channelized right-turn lane. The westbound Roberts Road approach provides a shared left-turn lane and a channelized right-turn lane.

Roberts Road and Wilson Boulevard

Roberts Road and Wilson Boulevard intersect to form an unsignalized T-shaped intersection. The southbound Roberts Road approach provides a shared left-turn/thru lane. The northbound Roberts Road approach provide one thru lane/ right turn lane. The westbound Wilson Boulevard approach provides separate left and right turn lanes and is under "stop" sign control.

Roberts Road and Crawfords Corner Road

Roberts Road intersects Crawfords Corner Road to form an unsignalized T-shaped intersection. The northbound Roberts Road approach provides a left-turn lane and a right-turn lane. The eastbound Crawfords Corner Road approach provides a shared thru/right-turn lane. The westbound Crawfords Corner Road approach provides a shared left-turn/thru lane.

Crawfords Corner Road and Bell Laboratories Road Northwest

Crawfords Corner Road and Site Dive Northwest intersect to form an unsignalized T-shaped intersection. The northbound Laboratories Road approach allows left-turns out only and provides a left-turn lane. The eastbound Crawford Corner Road approach provides a thru lane and a right-turn lane. The westbound Crawfords Corner Road approach provides a thru lane and prohibits left-turns in. This intersection is a right-in and left-out driveway.

Crawfords Corner Road and Bell Laboratories Road Northeast

Crawfords Corner Road and Bell Laboratories Road Northeast intersect to form an unsignalized T-shaped intersection. The northbound Bell Laboratories Northwest approach allows right-turns out only and provides a right-turn lane. The eastbound Crawford Corner Road approach provides a thru lane and prohibits right-turns in. The westbound Crawfords Corner Road approach provides a shared left-turn/thru lane. This intersection is a left-in and right-out driveway.

ESTIMATE OF FUTURE CONDITIONS

This section of the report covers site-generated trips and trip distribution.

Site-Generated Trips

We have prepared an estimate of site-generated trips for the proposed data center. The estimates were prepared using data compiled for Land Use Code 160 (Data Center) by the Institute of Transportation Engineers (ITE) as contained in the publication Trip Generation, 12th edition. Table 1 summarizes the trip generation estimates for the proposed data center for the weekday morning and evening peak hours and daily traffic generation.

Table 1 – Trip Generation Estimates – Proposed Data Center

Use	AM Peak Hour			PM Peak Hour			Daily		
	In	Out	Total	In	Out	Total	In	Out	Total
108,000sf Data Center	11	4	15	1	4	5	63	63	126

As can be seen by a review of the table, the data center will generate minimal peak hour and daily traffic. In general, peak hour traffic more than 100 vehicles per hour is considered potentially significant, requiring detailed traffic impact analyses. The projected peak hour traffic generation for the data center is well below this threshold. Further, the projected traffic is dissipated to three different roads adjoining roads by the existing Bell Works access and internal circulation system. Accordingly, the projected data center traffic will have a nominal impact on the adjoining roadway and access system.

PARKING

The data center will be supported by 34 parking spaces. In accordance with the Alcatel-Lucent Redevelopment Plan, the Data Center requires that 1 parking space per 1,500 square feet be provided. Accordingly, the Ordinance requires that 72 parking spaces be provided. As noted, 34 spaces will be available. Based on the low employee density (20/day) use of a data center, it is determined that significantly less parking than required by the Ordinance will be used. The applicant believes that 34 spaces or less will likely be utilized by the data center operations. In general, aside from maintenance purposes in the Data Halls, only 11,855 square feet of administrative space is provided. Based on data published by the Institute of Transportation Engineers in the Publication Parking Generation 6th Edition, a small office space of 11,855 square feet would have an average parking demand of 22 parked vehicles. Further, based on the data, the 85th percentile demand would be 30 parked vehicles. We note that the low parking utilization aligns with the projected daily traffic generation of the facility and projected daily employee occupancy of 14 employees on a peak shift and total 20 employees per day.

FINDINGS AND CONCLUSIONS

Langan finds that based on the nominal level of traffic that will be generated during the peak hours by the data center, that the proposed project will not significantly change traffic operations in the study area during peak hours. The project will utilize the access and circulation roads that support Bell Works which provide excellent connectivity and distribution of traffic to the adjoining regional roadway system. The internal driveway connection to Bell Laboratories Road will be security controlled and will accommodate right-in/ right-out movements only. Based on the level of exiting traffic during peak hours, we estimate that little or no delays will be experienced on the data center driveway approach.

Sufficient parking will be provided to meet the demands associated with the projected daily 20 staff/ vendors working within the data center.